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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(54) Title: VIDEO ENCODING METHOD AND CORRESPONDING COMPUTER PROGRAMME
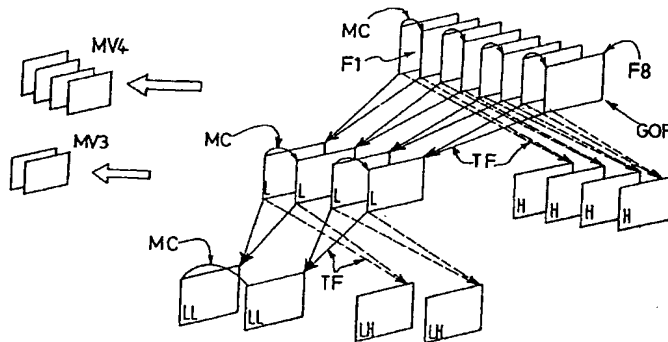
(57) Abstract: The invention relates to a method of encoding a sequence of frames, composed of picture elements (pixels), by
means of a three-dimensional (3D) subband decomposition involving a filtering step applied, in the sequence considered as a 3D
volume, to the spatial-temporal data which correspond in said sequence to each one of successive groups of frames (GOFs), and to
implementations of said method. The GOFs are themselves subdivided into successive pairs of frames (POFs) including a so-called
previous frame and a so-called current frame, and the decomposition is applied to said GOFs together with motion estimation and
compensation steps performed in each GOF on saids POFs and on corresponding pairs of low-frequency temporal subbands (POSs)
obtained at each temporal decomposition level. The process of motion compensated temporal filtering leading in the previous frames
on the one hand to connected pixels, that are filtered along a motion trajectory corresponding to motion vectors defined by means
of said motion estimation steps, and on the other hand to a residual number of so-called unconnected pixels, that are not filtered at
all, each motion estimation step comprises a motion search provided for returning a motion vector that minimizes a cost function
depending at least on a distorsion criterion, said criterion taking into account the unconnected pixels phenomenon for the minimizing
operation, itself based on specific rules allowing to obtain, either by a non-recursive or a recursive implementation, the optimal set
of motion vectors.